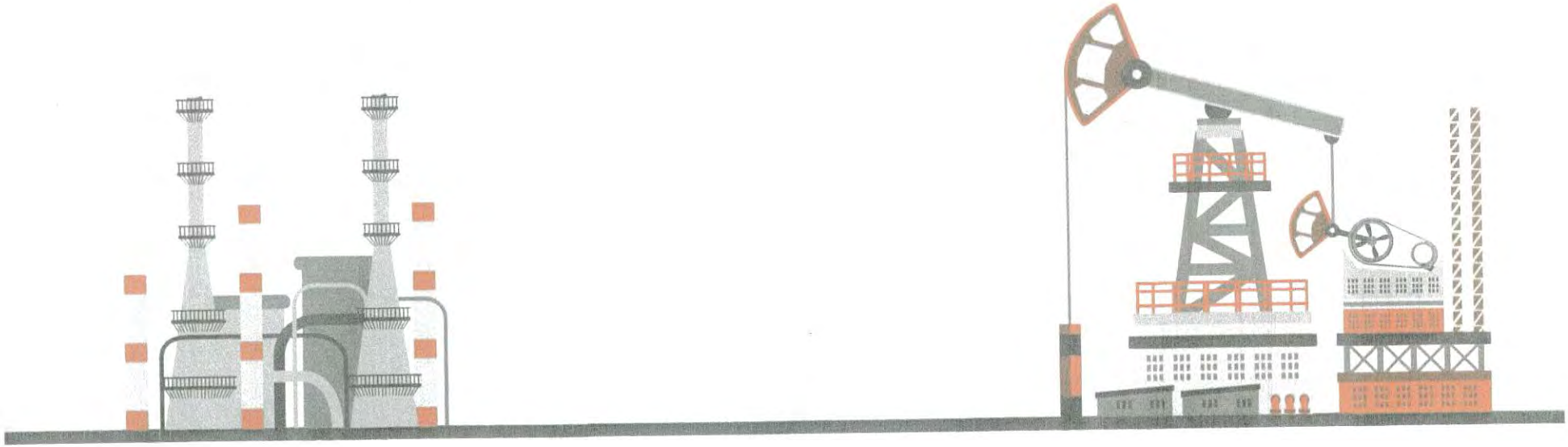
Support Required To Meet Natural Gas Objectives Of GoI

Submitted by: PNGRB

30th January, 2025



CNG Segment Overview

NG Transport Segment – Policy Interventions & Potential

01

02

03

04

~100% CGD Authorizations

NG transport sector is estimated to grow from present ~21 MMSCMD to ~63* MMSCMD by 2030 (ACU Case, 20% CAGR).

Infrastructure Development

-New Gas transmission pipelines
-17500 CNG Stations expected by 2030 (7395 stations as of 30th Nov'24.)
--$67 billion investment envisaged in next 5-6 years

Priority Allocation to CGD

-Meets the increasing gas demand in CNG segment.
- However, allocation reduced to ~37% for CNG (T) (increased back to 51% eff. 16th Jan'2025.).

Plan For Single Levelized Tariff

- Zone wise levelized tariff already implemented.
- Ensures viable delivery of gas to regions away from gas sources.

Sustainability Goals

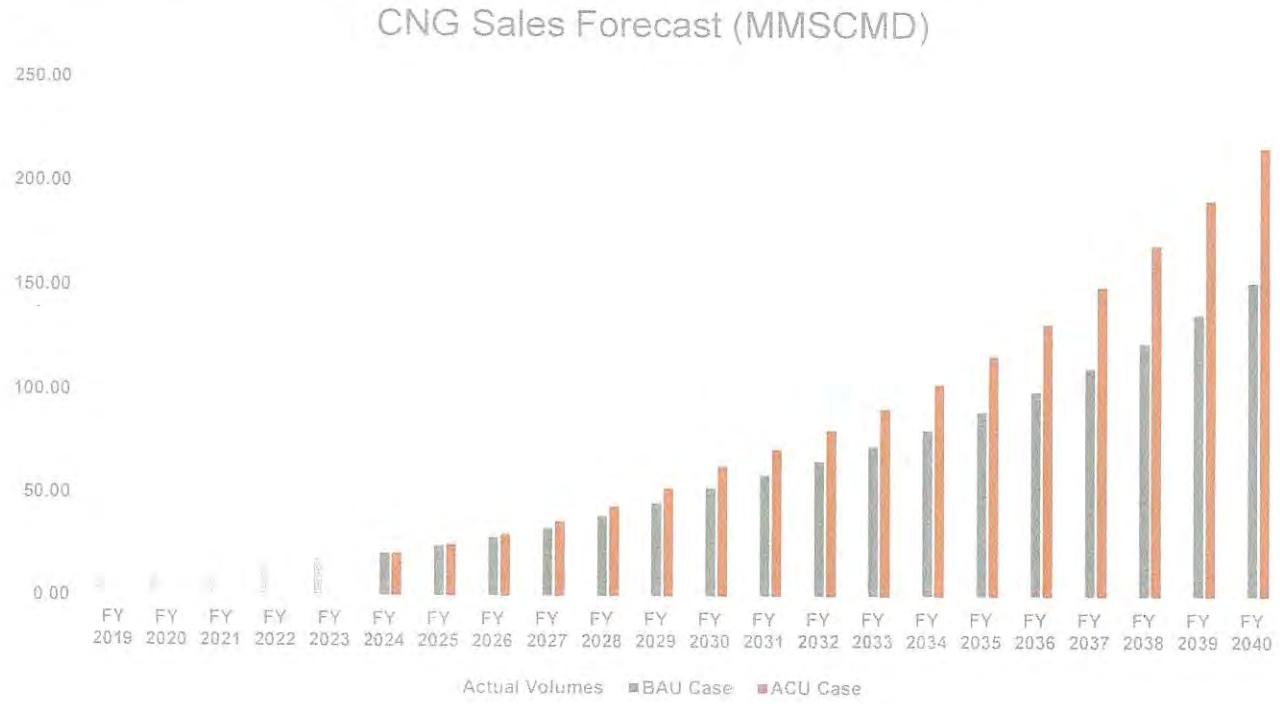
- Pathway to Net Zero by 2070.
- CO2 emission co-efficient (Kg.) per MMBTU of energy used : NG – 52, Petrol/Diesel - 76
- Contribute towards 45% reduction in emission target by 2030.
- LNG can replace diesel in highly polluting HDVs (India - ~700 vehicles, China ~8.5 lakh).

Energy Diversification

- Potential to leverage infrastructure for sustainable fuels like CBG and hydrogen.
- Availability of LNG from diversified global sources for import – Qatar (42%), USA (20%), UAE (11%), Angola (7%), others (20%) – in CY'24.

Press Information Bureau (pib.gov.in)
CO2 Emission Coefficient
Why natural gas is a strategic fuel in India's energy transition, ET EnergyWorld (indiatimes.com)
CNG Projections as per PNGRB Inputs., * PNGRB Projections

Transport Segment: Key Driver To Take Natural Gas Share To 15% Of India Energy Mix



CNG sales has been increasing at CAGR of ~14%.

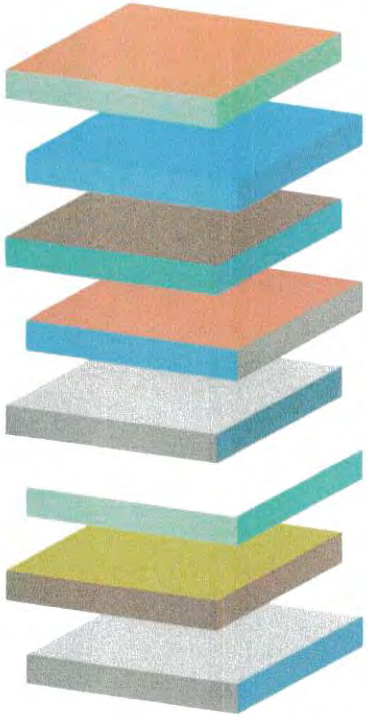
CNG vehicle sales have been increasing at CAGR of ~16%.

CAGR*

- ACU – 15.7% (FY'40 – 217mmscmd)
- BAU – 13.2% (FY'40 – 152mmscmd)

PPAC Source: PPAC, FY 25 data extrapolated from PPAC H1 Ready Reckoner, * PNGRB Projections

Three Crucial Proposals

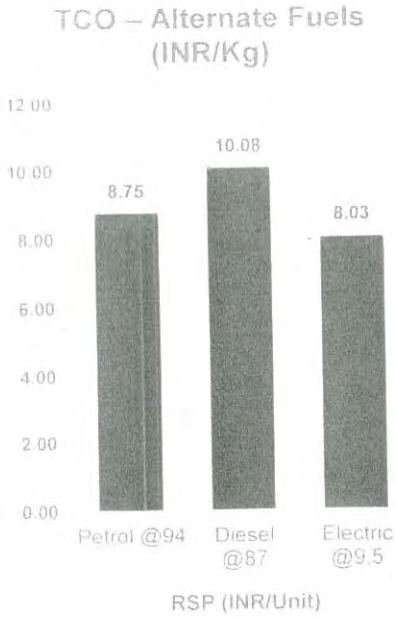


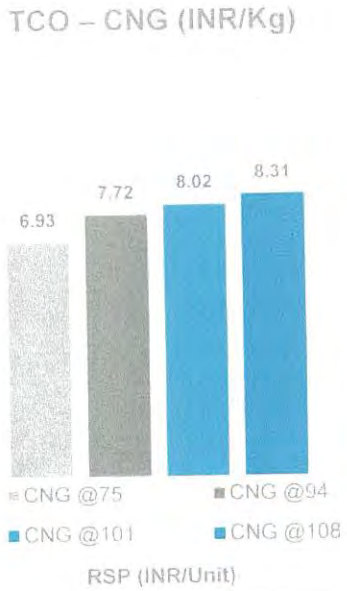
1. Waive off the excise duty on compression of CNG
2. GST on sale of CNG/LNG vehicles at par with EV
3. Waive off excise on CBG sold as co-mingled CNG
4. Waive off excise on LCNG

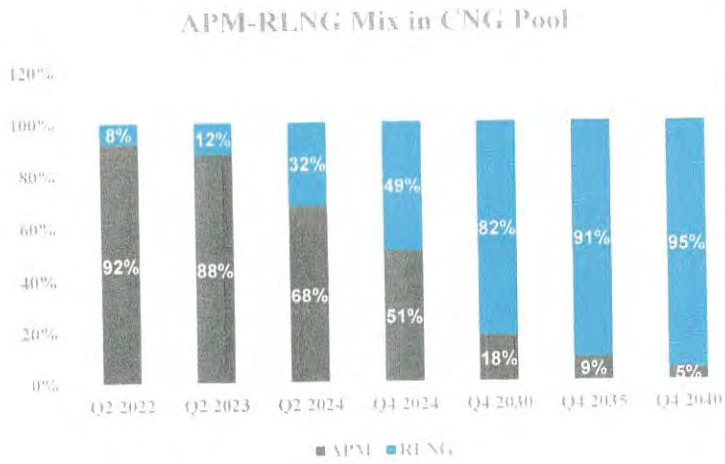
1 Excise Duty Waiver & Impact Analysis

CNG – Loses Advantage Over Petrol With Price Rise

~10%-15% discount over petrol prices has been the driving force behind growing CNG adoption by users.







CO2 Emissions (TTW)

(g/km)

- **CNG – 79**
- **EV* - 100**
- **Petrol - 117**
- **Diesel - 118**

Assumptions

- Daily Running – 60km
- Total Life – 15 years (10 years for diesel)
- No subsidy considered for Evs
- 11mmscmd APM qty till CY2040

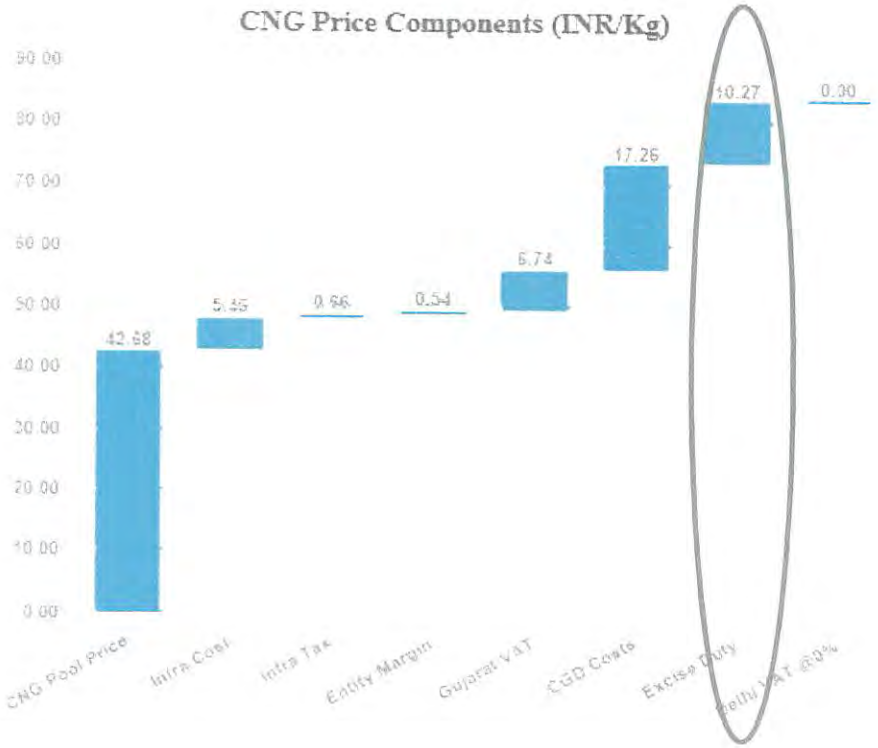
Power Cost – Rs.9.5/unit
Fuel Prices - ex Delhi

- It is important to maintain current prices of CNG in order to **maintain the discount for CNG over alternate fuels.**
- **Declining APM allocation** a major concern that can lead to price rise.

- RLNG @ 14$/MMBTU, APM @51% in CNG Mix, $/INR @86.5
- *EV Emissions considered from India power plant emissions as per CEA data.

Microsoft Excel Worksheet

Taxes Contributing To CNG Price



CNG RSP for Jan'25 (INR/Kg)	
• Delhi	– 75.09/-
• Rajasthan (Ajmer)	– 86.44/-
• Uttar Pradesh (Kanpur)	– 87.92/-

Tax Impact

Considering Delhi GA,

- **Excise duty accounts for ~12.3% of RSP.**
- **Gujarat VAT accounts for ~8% of RSP.**
- **Total taxation load comes to ~21% of RSP**
- For states with higher VAT, **taxation load can go up to 36%.**

CETA, 1944

- Compression of NG is considered as **Deemed Manufacturing**
- NG is **compressed to only fill more fuel** in the tank & to increase vehicle range.
- Due to **no ITC**, excise becomes a cost to the CGD.
- **LCNG is also being charged excise duty** at same rate as CNG.

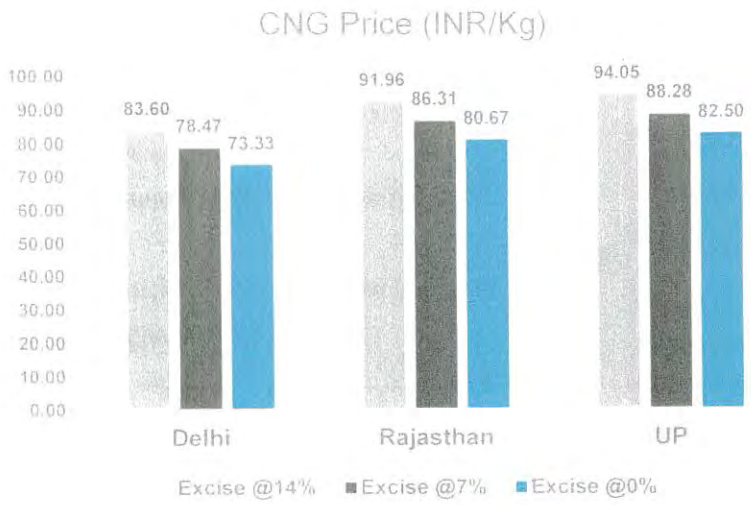
Assumptions:

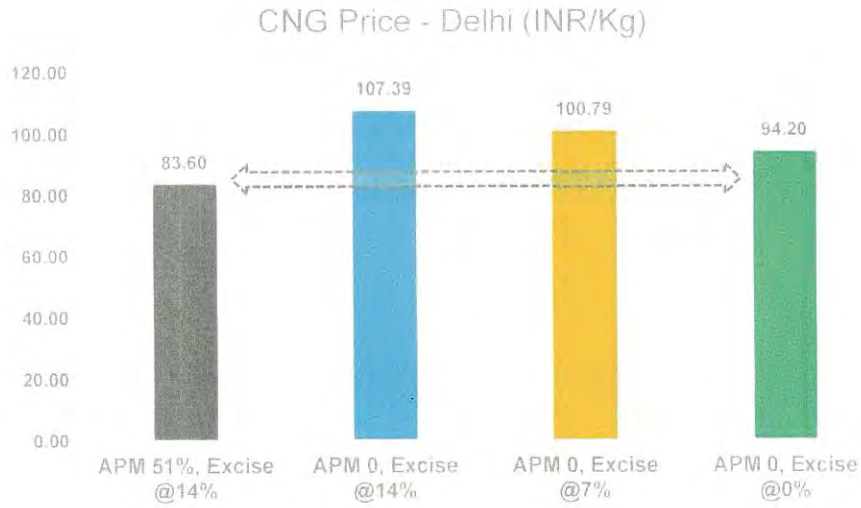
- *APM considered @51% of the pooled mix.*
- *RLNG considered @14$/MMBTU*
- *APM considered @6.5$/MMBTU*
- *$/INR @86.5 ; Rajasthan @10%VAT – 91.96 Rs./kg, UP @12%VAT – 94.05 Rs./Kg*

Compression as Deemed Manufacturing, Infra cost and CGD cost Breakup

Microsoft Excel Worksheet

Reduction In Excise Duty Can Negate Impact of Declining APM





- With APM allocation headed towards zero in near future, **reduction in excise duty is necessary to keep CNG competent** as compared to alternates.
- Additional consumption of RLNG instead of APM (~11mmscmd) in CGD(T) sector will add ~Rs. 580cr./annum to exchequer through customs and GST on infrastructure.
- Excise reduction to 0% will have an immediate impact of ~ **Rs. 6500 – Rs. 7000 cr/ year** on the exchequer.
- This reduction will immediately free-up the APM allocation towards CNG segment and can be diverted to other priority sectors.

- RLNG @ 14$/MMBTU, APM @51% in CNG Mix, $/INR @86.5
- APM Allocation Increased

Cost Benefit Analysis

Immediate Cost

Waiver of excise duty on compression of NG

~Rs. 6500 – Rs. 7000 Cr. Annually

- FY'25 CNG sale considered to be ~25mmscmd with average retail price of Rs. 85/Kg for excise revenue calculation.

Reducing GHG Emissions from EVs

- **Electricity for EVs is majorly produced from coal (~70%),** which is highly polluting.
- **Utilising gas fired power plants can help alleviate the issue of emissions from EV value chain.**
- Emission from **gas fired power plants (0.44 ton CO2/MWh)** are less than half as compared to **coal fired power plants (1.02 ton CO2/MWh).**

Benefits

Option 1:

Excise Benefit passed on to CNG Consumers:

- No change in domestic gas allocation for CNG (T).
- ~12.3% reduction in CNG Cost.
- Reduction in CO2 emissions (~30%) and PM in ambient environment.
- Reduction in healthcare expense (PMJAY Budget – Rs. 7500cr for FY'25) and ailments originating from polluted air.
- Gas Market Maturity leading towards GoI's mission to take the share of **NG to 15% of Energy Mix.**

Option 2:

Revival of Gas Based Power Plants:

- **~11 mmscmd** domestic Gas can be **diverted to run Gas Based Power Plants.**
- **~3.60 GW* of Gas based power capacity** can be revived at 60% PLF.
- **~Rs. 8800Cr*.** benefit as reduced cost of gas-based power.
- NPAs worth of **~Rs. 11500 Crores*** could be revived.
- Gas based power plants can be operated to cater peak power demand periods (e.g. - NTPC used ~ 3mmscmd RLNG in H1 2024).

There shall be **additional revenue in VAT** (for state govts.) on increased sale of Natural Gas through above reform.

PMJAY Budget
CO2 per MWh

*** ICF Internal Analysis**

Microsoft Excel Worksheet

2 GST Reduction on Sale of CNG/LNG Vehicles

Policy Support For CNG vs EV Vehicles

	EV Segment	CNG Segment
Subsidy Waiver	Under FAME I & II on following: a) Capital investment b) Registration & Road Tax c) Insurance d) Interest on loan for EV etc.	Support provided through APM allocations. But these allocations are gradually reducing.
GST on Vehicle Sale	5%	28%
Permission for Infrastructure	Minimal permissions required	EM, Forest, PESO, OISD, NHAI, etc.
CO2 Emissions	~100 g CO2/km* (Much higher emissions as ~70% of electricity is derived from coal.) (Includes emissions from power plants against fuel use, including AT&C losses)	~ 79 g CO2/km* (TTW Emissions Considered)

- **Further, LNG can be used as a clean fuel in HDV (Heavy Duty Vehicle) segment where use of EV technology is not yet feasible. GST on LNG HDVs also needs to be reduced from 28% to 5%.**

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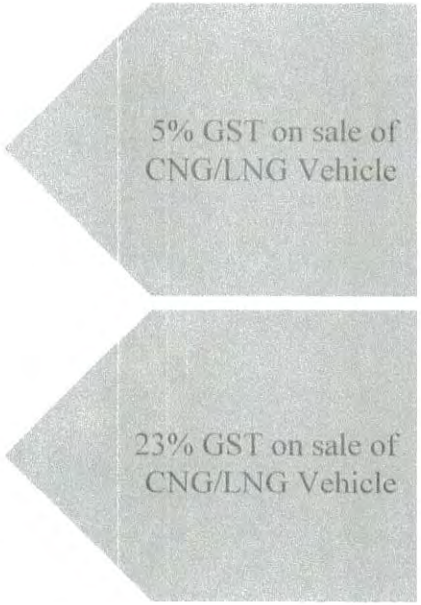
Press Information Bureau (pib.gov.in)
Science Direct GHG EV vs IC

* ICF Analysis

Microsoft Excel Worksheet

Cost Benefit Analysis Of Interventions



Immediate Cost

~Rs. 16800Cr. annually on account of reduction in GST by ~23%

- **~Rs. 800Cr.** annual additional revenue (ACU case) on account of reduction in GST by ~5%.
- **~ Rs. 7000Cr.** annual gain in tax collection expected FY30 onwards (ACU case).

Quantitative Benefits

Average ~Rs. 200 Crore additional annual revenue in first 5 years:

- Rs. 44 Crs. GST on Regas charges.
- Rs. 56 Crs. GST from Transportation Tariff.
- Rs. 100 Crs. revenue from Custom Duty

~ USD 67 Billion investment expected till 2030 in energy sector.

Qualitative Benefits

- Progress towards incresing share of **NG to 15% of Energy Mix**
- **Reduction in eCO2 emission by ~30%** as compared to petrol/diesel.
- Reduced burden on exchequer related to health issues, specifically **respiratory problems**

There shall be **additional revenue in VAT** (for state govts.) on increased sale of Natural Gas through above reform. Additional revenue is sum for initial 2 years.

Nitrogen Oxides (NOx) Emission from Fuels (engineeringtoolbox.com)
CO2 Emission Coefficient

3 Excise on CBG Sold as Co-Mingled CNG

Compressed Bio-gas (CBG) Sector In India

CBG Snapshot of India (Nov'2024)	
No. of CBG Plants Commissioned	80
ROs with ongoing CBG Sales	253
Sale of CBG	23578 tons (0.13MMSCMD)
No. of CBG/Bio- CNG plants Registered (Gobardhan)	819 (Gobardhan Portal)
CBG Production Target under SATAT	~53 MMSCMD (15 MMTPA)
Union Budget '23-'24	Rs. 10,000cr. 200 CBG Plants 300 Community Plants

- **CBG being considered an important sustainable fuel with multiple advantages – domestic production capacity, reduce forex expense, promote circular economy and achieve Net Zero targets.**
- **MoPNG** order dated 27th Feb' 2024 has mandated the blending of CBG with CNG (T) and PNG(D). **CBO (CBG Blending Obligation) shall be kept as 1%, 3% and 4% of total CNG/PNG consumption for FY 2025-26, 2026-27 and 2027-28.**
- **MoHUA – Urban 2.0** - Central Assistance is provided to States and Union Territories for solid waste management. Additional Central Assistance of 25% /33%/50% (based on ULB population) for MSW based CBG plants.
- **MoPNG** has launched Sustainable Alternative Towards Affordable Transportation **(SATAT).** Under this initiative, OGMCs invite expression of interest from entrepreneurs to procure CBG for further marketing on long term agreement basis.
- **MNRE – Waste to Energy Program** provides Central Financial Assistance (CFA) to project developers and service charges to implementing agencies on successful commissioning of plants for the generation of Biogas.

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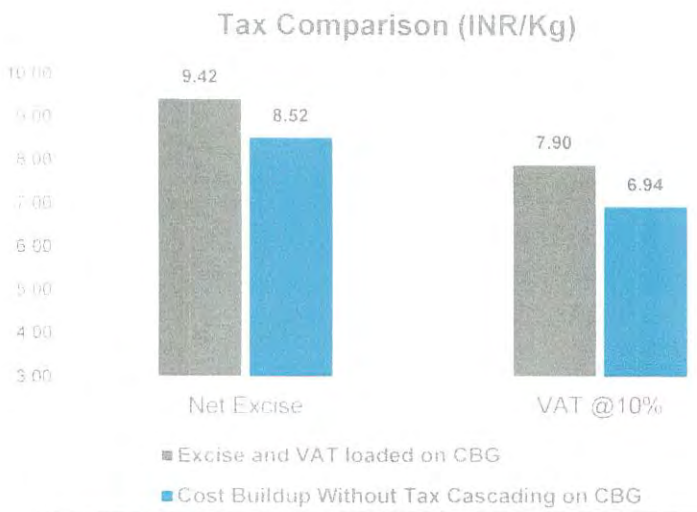
Gobardhan Policy Support
CBG Data from Gobardhan (14th Jan'25) and PPAC (Nov'24)

Additional Excise And VAT Charged On CBG



- CBG blending considered at 10% of CNG pool.
- CBG procurement considered at ~ Rs.68/Kg
- Additional excise and VAT lead to **~2% rise in CNG prices.**
- Impact on final price will increase as the blending of CBG increases.
- This will adversely affect the uptake of CBG as a transportation fuel.

CBG taxed under GST @5%. GST is paid to producers at the time of procurement.

CNG is not covered under GST. **Excise @14% and state VAT is charged** at applicable rates.

Only the amount of GST paid by CGD entity towards CBG procurement is allowed to be offset against excise duty paid. This still allows **cascading of ~9% (14% excise - 5% GST) excise duty** on top of CBG component.

Additionally, since co-mingled product is sold as CNG, states levy VAT on co-mingled product at prevailing rates, say 10% (Rajasthan). **This 10% VAT is another cascading tax** in addition to 9% excise duty levied on CBG.

A product that was to be taxed @5% under GST is being taxed ~19%-30% excessive rates. **This nullifies the measures taken by GoI to promote usage of CBG as a sustainable fuel and promote energy independence.**

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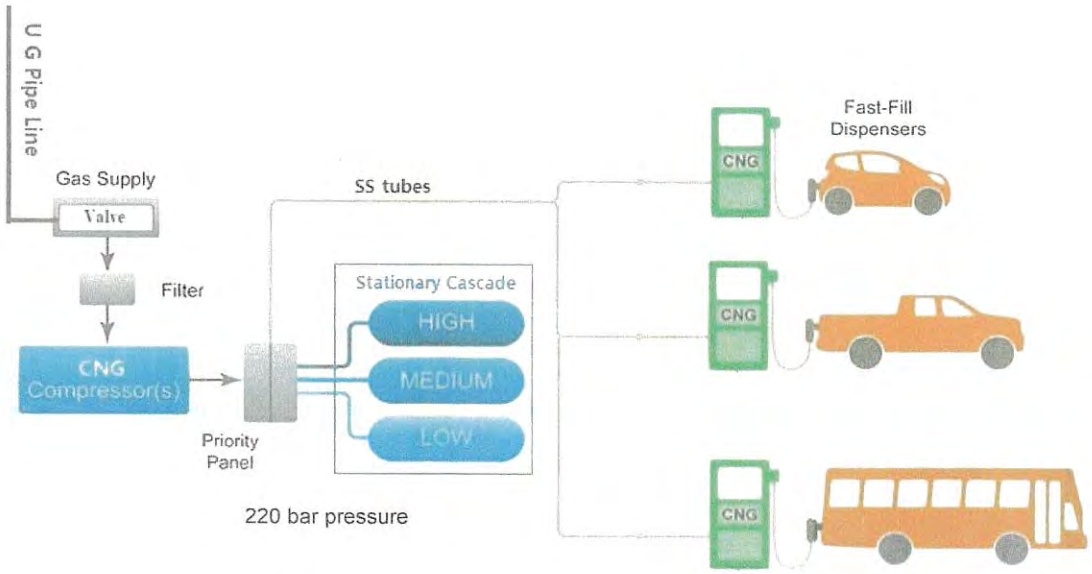
Microsoft Excel Worksheet

4 Excise on LCNG

NG is compressed only to increase the vehicle range

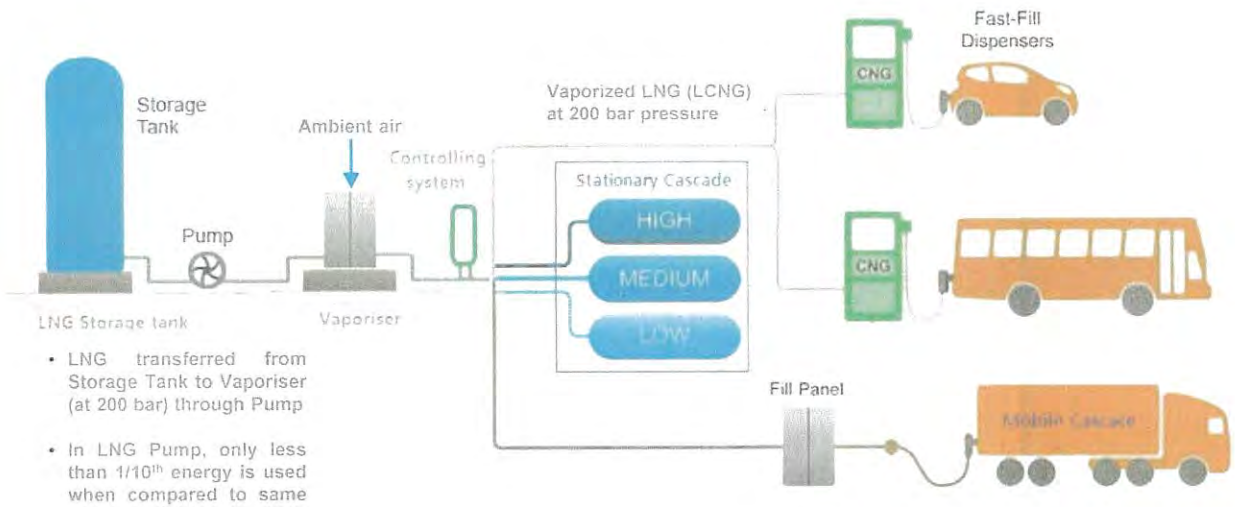


- NG is compressed to fill more gas in tanks
- Compression doesn't change the properties of gas
- Consumers are technically buying NG, which is filled in tanks to attain 200+bar pressure
- The gas is again de-pressurized to be used as fuel in vehicles

Typical diagram of Online CNG station facility

Adobe Acrobat Document

LCNG doesn't involve Compression Activity



Typical Diagram of L-CNG Mother facility

- LNG is vaporized to LCNG.
- In vaporiser, upon contact with Ambient air, LNG (-162 C) automatically gets vapourised.
- There is no "Process of compression of Natural Gas" (Refer figure)
- Removing excise duty on LCNG component can improve payback period by ~15% - 20% depending on the proportion of LCNG/LNG sales from retail outlet.

Microsoft Excel Worksheet

THANK YOU!